

ABSTRACT

Link failure messages are sent through a network to accelerate convergence of routing information after a network fault. The link failure messages reduce the oscillations in routing information stored by routers, which otherwise can cause significant problems, including intermittent loss of network connectivity as well as increased packet loss and latency. For example, the link failure messages reduce the time that a network using a path vector routing protocol, such as the Border Gateway Protocol (BGP), takes to converge to a stable state. More particularly, upon detecting a network fault, a router generates link failure information to identify the specific link that has failed. In some types of systems, the router communicates the link failure information to neighboring routers as well as a conventional update message withdrawing any unavailable routes. Once other routers receive the link failure information, the routers do not attempt to use routes that include the failed link.